BEEF & FORAGE CENTER
UTIA INSTITUTE OF AGRICULTURE
THE UNIVERSITY OF TENNESSEE

Research Report 20-13
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2020 COOL-SEASON ANNUAL GRASS VARIETY TRIAL

The forage cultivar evaluation program is a partnership between University of Tennessee Extension and UT AgResearch to aid producers in the selection of the best cultivars for their farm. The crop was grown using management practices considered to be the best for the crop, including fertilization according to soil test results. This study was conducted using a randomized complete block design with three replications. Least significant difference (LSD) values at the 5 percent level are shown at the bottom of each table with the coefficient of variation (CV). Within any table, yield of any two varieties being compared must differ by at least this amount to be considered different.

Table 1: Yield of cool-season annual ryegrass varieties at the Highland Rim AgResearch and Education Center in Springfield, TN.

Variety	Species	Supplier	Commercially Available	Yield (ton DM/acre)		
				Apr 22	May 31	Total
Baqueano	Annual Ryegrass	Smith Seed Services	Yes	1.28	2.09*	3.37
Fria	Annual Ryegrass	Tennessee Farmers Co-Op	Yes	1.43	2.11*	3.54*
FrostProof	Annual Ryegrass	Smith Seed Services	Yes	1.63	2.05*	3.68*
Green Farm 2	Annual Ryegrass	Smith Seed Services	Yes	2.40*	1.79	4.19*
Jackson	Annual Ryegrass	The Wax Company	Yes	1.41	2.06*	3.47*
Jumbo	Annual Ryegrass	Barenbrug USA	Yes	1.14	1.59	2.74
Nelson	Annual Ryegrass	The Wax Company	Yes	1.24	2.21*	3.45*
Passerel Plus	Annual Ryegrass	Pennington Seed	Yes	1.23	2.03	3.26
Rapido	Annual Ryegrass	Smith Seed Services	Yes	2.10*	2.00	4.10*
TAMTBO	Annual Ryegrass	Oregro Seeds	Yes	0.99	2.09*	3.08
Trinova	Annual Ryegrass	Smith Seed Services	Yes	1.56	1.88	3.44*
Wax Marshall	Annual Ryegrass	The Wax Company	Yes	1.64	2.22*	3.86*
Winterhawk	Annual Ryegrass	Oregro Seeds	Yes	1.30	2.12*	3.42*
Experimental Varieties						
GALM1516	Annual Ryegrass	The University of Georgia	No	2.23*	1.57	3.80*
GALM1517	Annual Ryegrass	The University of Georgia	No	1.25	1.84	3.09
GALM1618	Annual Ryegrass	The University of Georgia	No	1.25	2.05*	3.30
GALM1804D	Annual Ryegrass	The University of Georgia	No	1.25	2.00	3.25
GALM1812T	Annual Ryegrass	The University of Georgia	No	1.26	1.69	2.95
K014-Wear	Annual Ryegrass	Oregro Seeds	No	1.14	2.21*	3.35
M2CVS	Annual Ryegrass	The Wax Company	No	1.26	2.45*	3.71*
ME4	Annual Ryegrass	The Wax Company	No	1.68	2.04	3.72*
ME-94	Annual Ryegrass	The Wax Company	No	1.34	2.13*	3.47*
PPERC7	Annual Ryegrass	Pennington Seed	No	1.41	2.47*	3.88*
WMWL	Annual Ryegrass	The Wax Company	No	1.69	2.10*	3.79*
WMWL-2	Annual Ryegrass	The Wax Company	No	1.39	2.04	3.43*
			CV	24	11	10
			LSD (P<0.05)	0.55	0.42	0.80

* yielded statistically the same as the top-yielding variety

Nitrogen application: 45 lb/acre at planting, 60 lb/acre at green-up, 30 lb/acre after first harvest

Planted September 30, 2019

Table 2: Yield of cool-season annual small grain varieties at the Highland Rim AgResearch and Education Center in Springfield, TN.

Variety	Species	Supplier	Commercially Available	Yield (ton DM/acre)		
				Apr 22	May 31	Total
Bates RS4-FG	Rye	Noble Research Institute	Yes	1.25*	0.76	2.01*
Elbon-FG	Rye	Noble Research Institute	Yes	1.19*	0.91*	2.10*
Experimental Varieties						
140760	Barley	Oregro Seeds	No	0.65	0.56	1.21
140789	Barley	Oregro Seeds	No	0.42	0.87*	1.29
140797	Barley	Oregro Seeds	No	0.57	0.72	1.29
NF95319B-FG	Rye	Noble Research Institute	No	1.25*	0.98*	2.23*
NF97325-FG	Rye	Noble Research Institute	No	1.34*	1.17*	2.51*
NF99362-FG	Rye	Noble Research Institute	No	1.26*	1.00*	2.26*
			CV	5	3	3
			LSD (P<0.05)	0.34	0.31	0.39
* yielded statistically the same as the top-yielding variety						
Nitrogen application: 45 lb/acre at planting, 60 lb/acre at green-up, 30 lb/acre after first harvest						
Planted September 30, 2019						

Table 3: Mean forage nutritive values by harvest.

Species	Constituents[1] (%)	Harvest Date	
		Apr 22	May 31
Annual Ryegrass	CP	10.5	7.7
	ADF	25.7	37.7
	NDF	39.8	61.8
	TDN	71.7	59.7
Barley	CP	10.0	7.5
	ADF	27.1	38.5
	NDF	43.7	63.6
	TDN	70.3	58.3
Rye	CP	7.8	7.3
	ADF	29.3	37.7
	NDF	49.8	63.6
	TDN	67.9	59.1

[1] Nutritive values represented at 100% DM Basis for CP, crude protein; ADF, acid detergent fiber; NDF, neutral detergent fiber; TDN, total digestible nutrients; (Analysis performed using Near Infrared Spectrometer [NIRS] Technology). Target stage of growth for harvest was late boot. Grass Hay Calibration (NIRS Consortium, 2020).

This and other useful information can be found at your local UT Extension office, or on our website.

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